

NEW COLONIAL VACELETIA-TYPE SPHINCTOZOAN FROM THE PACIFIC.

Memoirs of the Queensland Museum 44: 498. 1999:- Three new morphotypes of a Recent colonial sphinctozoan coralline sponge are presented. All types show close relationships to the taxon *Vaceletia crypta*, a non-colonial form from Indo-Pacific reef caves. The first two types were discovered in shallow water reef caves of Osprey Reef, N Queensland Plateau in the Coral Sea. These sponges are common in these caves. The third type of colonial sphinctozoan was found only at two localities at North Astrolabe Reef and Great Astrolabe Reef in Fiji. This variety shows similarities with a previously described deep water variation of *Vaceletia* from New Caledonia.

The first two morphotypes of colonial *Vaceletia* from Osprey Reef show more similarities to the cryptic, non-colonial form *V. crypta* from reef caves of the Great Barrier Reef and reefs of the Indo-Pacific, than to the deep-water colonial species described by Vacelet (1988) and Vacelet et al. (1992) from New Caledonia. The third variation from Astrolabe Reef is more similar to this deep water variation from New Caledonia. All three variations will be described elsewhere in detail as multidisciplinary taxonomic and geochemical investigations of these taxa are still in progress (Reitner & Wörheide, 1995; Wörheide & Reitner, 1996).

The discovery of these three new colonial variations from shallow water reef caves of the SW Pacific clearly demonstrates that colonial forms of Recent *Vaceletia* are not restricted to deep waters, as previously thought.

Sphinctozoan sponges were primary reef building organisms during the Permo-Triassic. They are chambered calcified sponges with morphological similarities to Cambrian Archaeocyaths. The *Vaceletia*-type of coralline sponges occurred first in the middle/late Triassic (Reitner, 1992). Sphinctozoans were considered to be rare since the end of the Triassic, and were thought to be extinct since the end of the Cretaceous; that is until the 'living fossil' *Vaceletia* was discovered by Vacelet (1979) in the Indian Ocean.

The solitary, non-colonial form *Vaceletia crypta* has no reef building potential and is found only sparsely dispersed in the darker areas of Indo-Pacific reef caves.

These recently discovered colonial variations of *Vaceletia* from shallow water reef caves retain a colonial growth mode and a reef building capability.

They provide, therefore, clues to understand the modalities of skeletal construction and biocalcification, as well as the ecology of Permo-Triassic sphinctozoan sponges. □ *Porifera, coralline sponges, mud-mounds, Vaceletia, colonial reef-building sphinctozoans, Osprey Reef, Coral Sea.*

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